

VALVE ELECTRONIC

CV 2358

GENERAL POST OFFICE: E-IN-C (S)

Specification: GPO/CV.2358...../Issue 1. Dated: February 1955. To be read in conjunction with K 1001	<u>SECURITY</u>	
	<u>Specification</u> Unclassified	<u>Valve</u> Unclassified

<u>TYPE OF VALVE:</u> Travelling wave amplifier <u>CATHODE:</u> Indirectly heated <u>ENVELOPE:</u> Glass <u>PROTOTYPE:</u> W7/1D. & VX7039		<u>MARKING</u> See K 1001/4	
		<u>BASE</u> I.O.	
<u>RATING</u>		Note	<u>CONNECTIONS</u>
Heater Voltage	(V) 6.3		<u>Pin</u> <u>Electrode</u>
Heater current	(A) 0.85		1 No connection
First anode voltage Va 1	(kV) 0.85	A	2 Heater
Helix voltage (max.) Va 2	(kV) 1.6	B	3 No pin
Collector voltage Va 3	(kV) Va2+50		4 1st anode
Cathode current (max.)	(mA) 6		5 No pin
Collector current	(mA) 4		6 2nd anode & helix
First anode current (max.)	(mA) 250		7 No pin
Second anode & helix current (max.)	(mA) 2		8 Heater & cathode
Output (max.)	(mW) 120		Top Cap. 3rd anode.
Bandwidth (min)	(Mc/s) 1000	C	
Wavelength	(cms) 6.5 to 8.5		
Amplification (min).	(db) 19.5	D	
		<u>DIMENSIONS</u> See drawing on Page 3	
<p><u>NOTES</u> A. The first anode draws negligible current and may be supplied by a potentiometer connected between the helix supply & cathode</p> <p>B. The optimum helix voltage for individual valves lies between 1.3 & 1.5 KV.</p> <p>C. Between 3 db power points.</p> <p>D. For small signal levels. At maximum output it is approximately 3 db lower.</p>			

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TESTS.

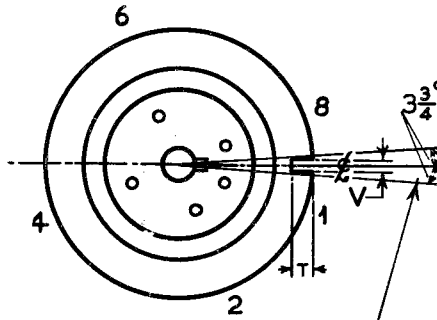
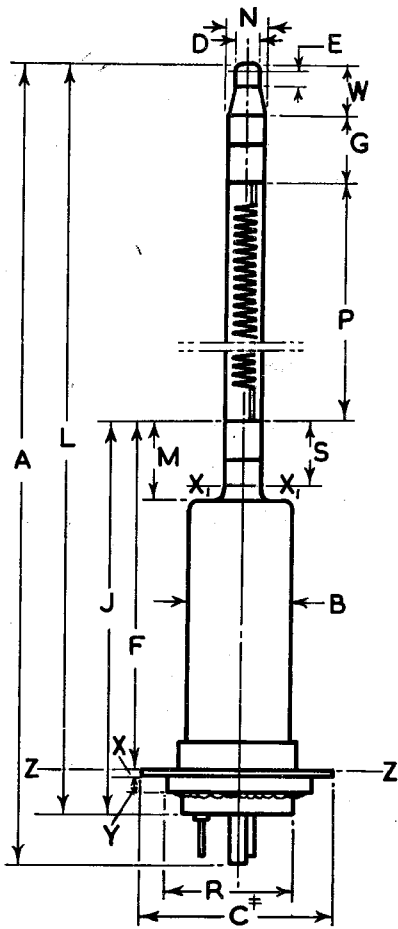
To be performed in addition to those applicable in K1001

Test condition						Test	Limits		No. tested	Note	
Vh (V)	Va1 (V)	Va2 (V)	Va3 (V)	Ic (mA)	Ia3 (mA)		Min	Max			
a	Physical inspection					All valves shall conform to the dimensions stated on drawing on Page 3		-	-	100%	
b	6.3	-	-	-	-	Heater current (A)	0.04 0.07	0.28 0.27	100%	1,2	
c	6.3		1400	1450	6	1st anode voltage (V)	480	1220	100%	1.	
d	6.3		1400	1450		4	Cathode current (focusing) (mA)	-	6.5	100%	1,3
e	6.3		1400	1450		4	1st anode current (mA)	-	250	100%	1.
f	6.3			Va2 +50		4	Optimum 2nd anode voltage (V)	1280	1520	100%	1,4
g	6.3		Opt.	Va2 +50		4	Amplification at not more than 10 μ W input at 7.5cms(db)	19.5	-	100%	1,5
h	6.3		Opt.	Va2 +50		4	Maximum power output (mW)	90	-	100%	1,6
j	4.5 5.5	As in test C	1400	1450			Cathode current (emission) (mA)	3.8	-	100%	1,7
k	2nd anode & helix to 1st anode + cathode + heater					Inter electrode capacitance (pF)		6.0	7.5	100%	1.

Notes

- The tests are to be performed in an approved circuit.
- The heater current shall be read not less than one minute after switching on heater.
- At a cathode current of 2 mA, the valve shall be first focused by adjustment of the deflector coil current, such that Ia3 is maximum.
- Va2 shall be adjusted to give maximum gain at a wavelength of 7.5cms.
- The tuning pistons shall be adjusted for maximum gain.
- IA3 shall be adjusted to 4 mA and the helix voltage to its optimum valve using an input signal of less than 100 μ W. The standing-wave ratio in the output waveguide shall be less than two to one.
- The reading of Ic shall not be taken until 1 min. after reducing Vh to ~~4.5~~ 5.5 volts.

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RING KEYWAY & BASE KEY SHALL NOT DEVIATE FROM A COMMON C BY MORE THAN 3 3/4 IN EITHER DIRECTION.

NOTE 1:-

‡ ALIGNMENT RING (DIM. C) SHALL NOT FOUL A CYLINDER OF 2.651" INT. DIA. WHICH IS CONCENTRIC WITH AXIS OF TUBULAR PORTION 'P'

NOTE 2:-

PERIPHERY OF ALIGNMENT RING (DIM C) SHALL NOT DEVIATE FROM PLANE Z-Z BY MORE THAN ± 0.015."

DIM	MILLIMETRES	DIM	MILLIMETRES
A	350.8 MAX.	N	9.83 MAX.
B	30.2 MAX.	P	190.50 ± 0.51
C	66.52 ± 0.05	R	46 ± 0.8
D	7.92 ± 0.05	S	9.5 MIN.
E	5.5 ± 1.6	T	3.18 ± 0.25
F	87.31 ± 0.38	V	1.65 + 0.25
G	19.1 ± 2.4		- 0.00
J	104.8 ± 3.2	W	14.3 ± 1.6
L	336.6 MAX.	X	4.75 ± 0.12
M	20.6 ± 3.2	Y	7.92 ± 0.25